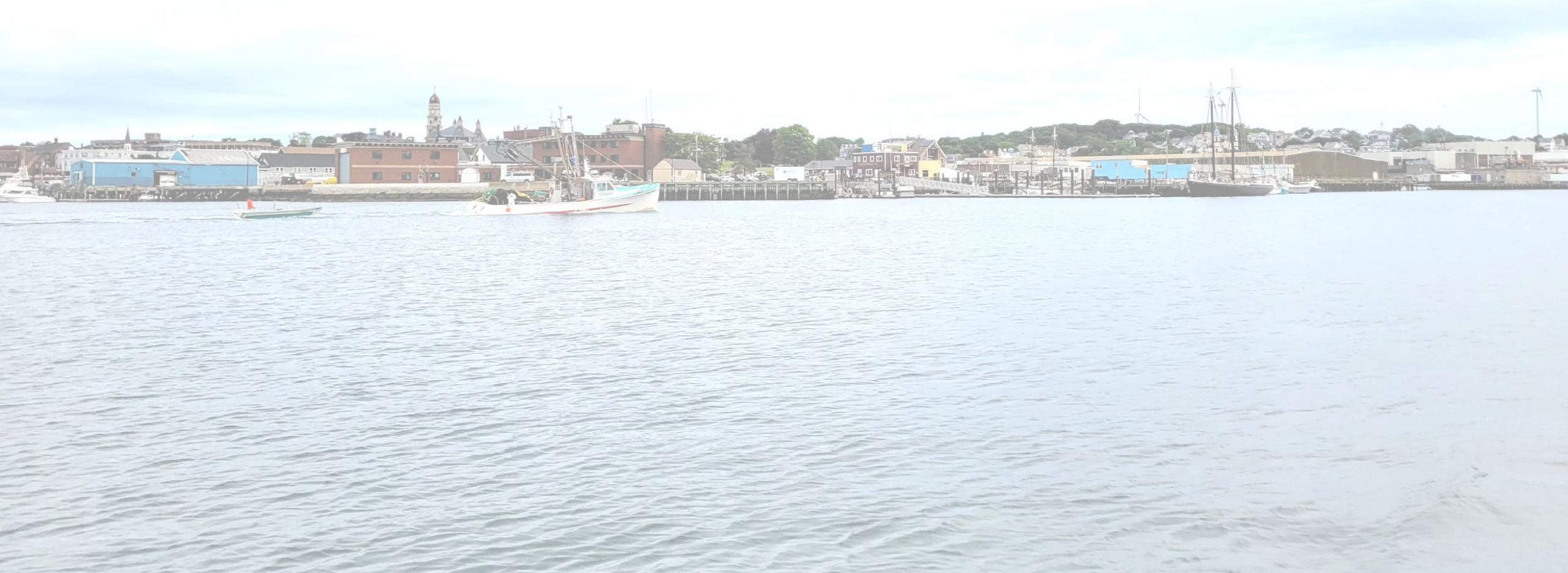


# Gloucester Municipal Harbor Plan Update

## Economic Strategy Baseline Summary

August 11, 2021



# Agenda

1. Engagement Summary
2. Blue Economy Basics
3. Gloucester's Economic Baseline
  - a. FISHING & SEAFOOD
  - b. TOURISM & RECREATIONAL BOAT USE
  - c. MARINE SCIENCE & BLUE TECH (WAITING FOR NSBE REPORT RELEASE)
4. Gloucester's Resilience & Infrastructure Baseline
  - a. INFRASTRUCTURE CONDITION
  - b. FLOOD RISK
5. Initial Economic Strategy Sub-Areas
6. Next Steps & Schedule

# Initial Outreach Takeaways

## COMMERCIAL FISHING/PROCESSING

**How can we position Gloucester to thrive in a shifting market?**

- Market is shifting from large-boat to smaller-boat operations and catch type is evolving from cod/groundfishing towards lobstering.
- Future of a thriving economy may not be about volume but rather how you put together ocean resources and processing ability.
- How can Gloucester protect affordable docking while making properties productive with healthy revenue? What is the balance of recreational vs commercial and transient vessel dockage?
- Meeting seafood processing wastewater regulations can be expensive - worth exploring collective solutions

## ECONOMIC DEVELOPMENT

**Where is Gloucester going as a 21st century fishing port?**

- How do we cultivate a harbor ecosystem, an “ocean cluster”?
- How to cultivate a balance of fishing and compatible uses? Open to tourism & blue tech if they support more traditional industries.
- Desire to make Gloucester more attractive to developers
- Marine research seen as positive development
- Desire for the harbor’s economic strategy to connect beyond the harbor

## REGULATIONS & MHP PROCESS

**How can we use the DPA to support a broader economic strategy?**

- General public sees DPA as hindrance to development while the Fishing industry sees it as the only thing that keeps area from being flipped
- A lot of complexity of regulation interaction (Federal, DPA, Ch91): property and business owners need guidance/examples of successful outcomes
- Small properties have a hard time with Water Dependent Use Zone
- How to adapt definitions to welcome in 21st Century uses that support a thriving/competitive harbor economic ecosystem while retaining protection?
- How can we provide more predictability: you can get all the way to the altar and get turned away for Water Dependent Industrial uses.

## OVERALL ISSUES & OPPORTUNITIES

**How to promote reinvestment when harbor is mostly private land?**

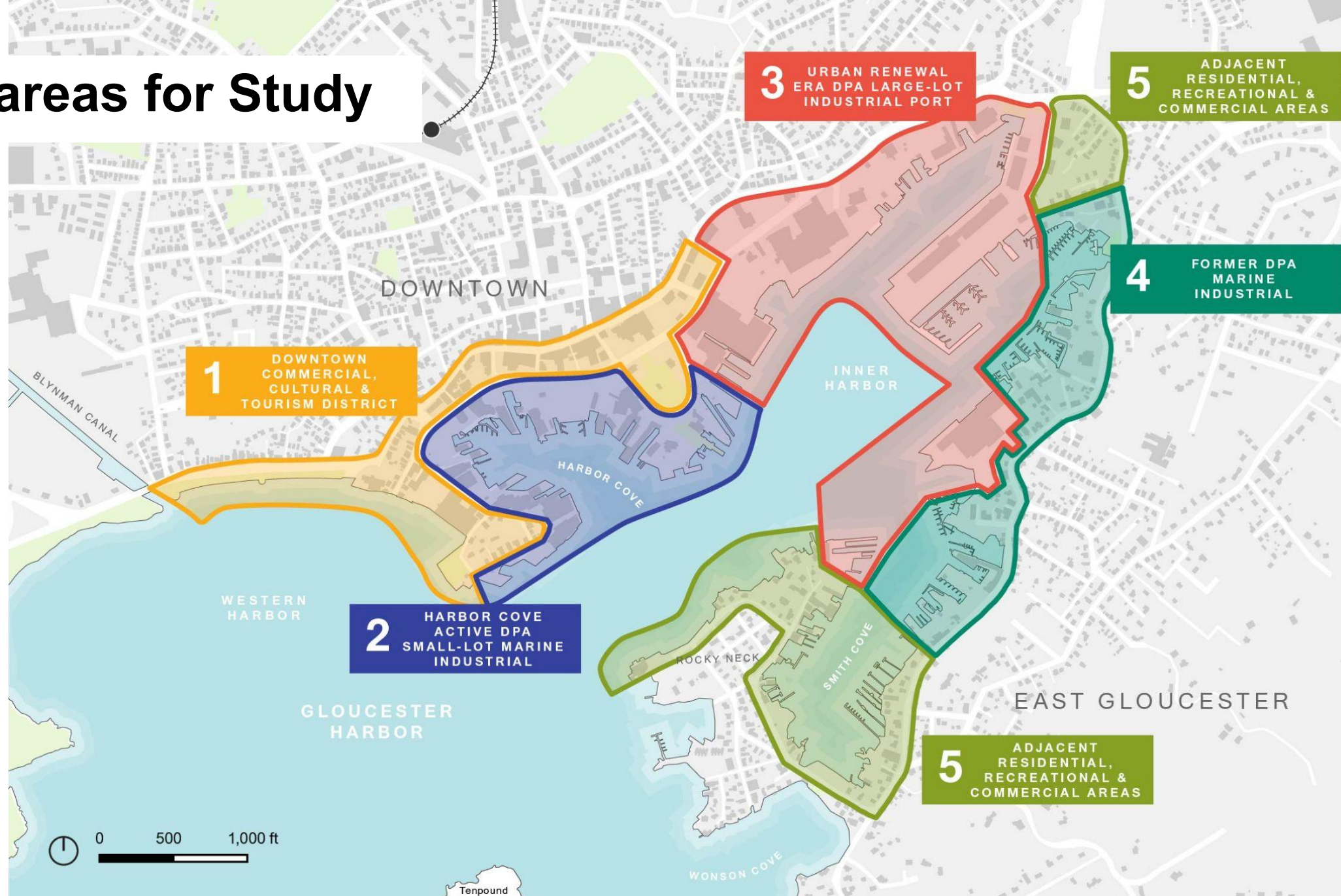
- Desire to retain fishing heritage and identity - fishing is in blood of residents!
- Manage industrial interactions with residential, recreational & tourism uses
- How to activate and revive underutilized and derelict areas?
- Issues of parking, truck route and public ROW space management
- Flood damage and increasing risks to infrastructure & business operations
- Future of I4C2 (65 Rogers Street)



# Initial Sub-areas for Study

Many of the comments and concerns we heard from you were place-specific and highlighted priorities for different areas along the harbor.

We propose thinking about the harbor in terms of different sub-areas with different assets, issues and opportunities.





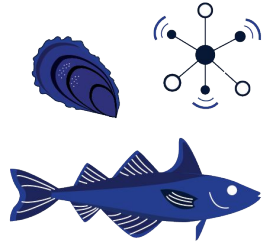
# Blue Economy Basics

Understanding the framework of the forthcoming North Shore Blue Economy Report.



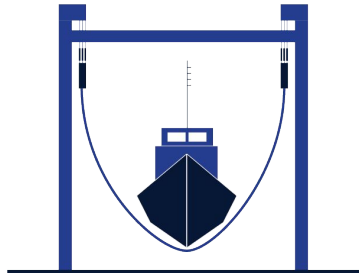
# Blue Economy Sectors

Source: 2017 Navigating the Global Economy: A Comprehensive Analysis of the Massachusetts Maritime Economy



## LIVING RESOURCES

Fish Hatcheries & Aquaculture;  
Fishing;  
Seafood Markets;  
Seafood Processing



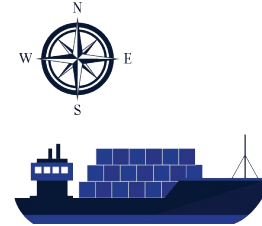
## SHIP & BOAT BUILDING

Boat Building & Repair; Ship Building & Repair



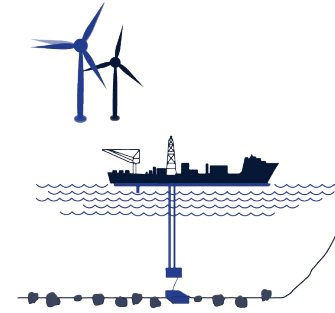
## COASTAL TOURISM & RECREATION

Amusement & Recreation Services;  
Boat Dealers; Eating & Drinking Places;  
Hotels & Lodging Places; Marinas; RV Parks/Campgrounds;  
Scenic Water Tours;  
Sporting Goods; Zoos & Aquaria



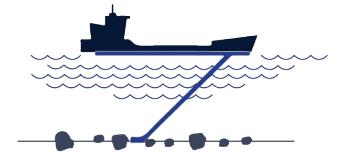
## TRANSPORTATION

Deep Sea Freight;  
Marine Passenger Transportation;  
Marine Transportation Services; Search & Navigation Equipment;  
Warehousing



## MARINE CONSTRUCTION

Marine Related Construction (including offshore wind, dredging and environmental engineering)

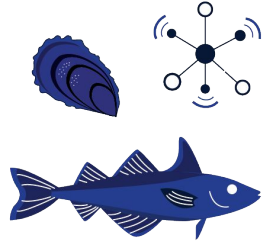


## OFFSHORE MINERALS

Oil & Gas Exploration & Production;  
Sand & Gravel Mining

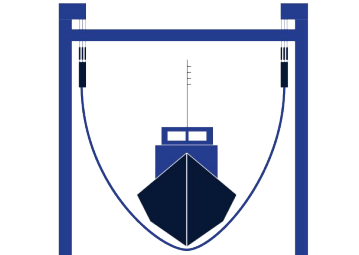
# Blue Tech / R&D Cluster is Cross-Cutting

Source: 2017 Navigating the Global Economy: A Comprehensive Analysis of the Massachusetts Maritime Economy



## LIVING RESOURCES

Oceanography  
Marine Life  
Sciences



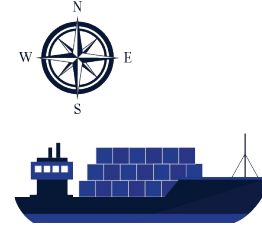
## SHIP & BOAT BUILDING

Materials research,  
prototyping and  
testing



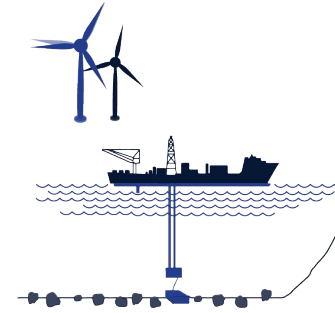
## COASTAL TOURISM & RECREATION

Conservation, Zoos &  
Aquaria



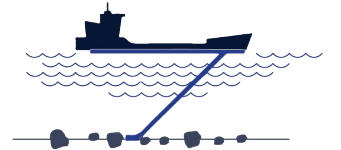
## TRANSPORTATION

Search & Navigation  
Equipment



## MARINE CONSTRUCTION

Offshore Wind  
Environmental  
Engineering



## OFFSHORE MINERALS

Resource  
Extraction  
R&D



# Gloucester's Economic Baseline





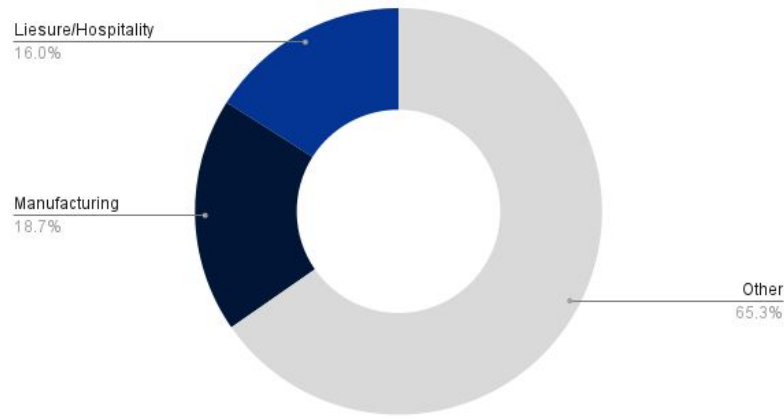
## Gloucester Harbor

# Overview of Key Findings

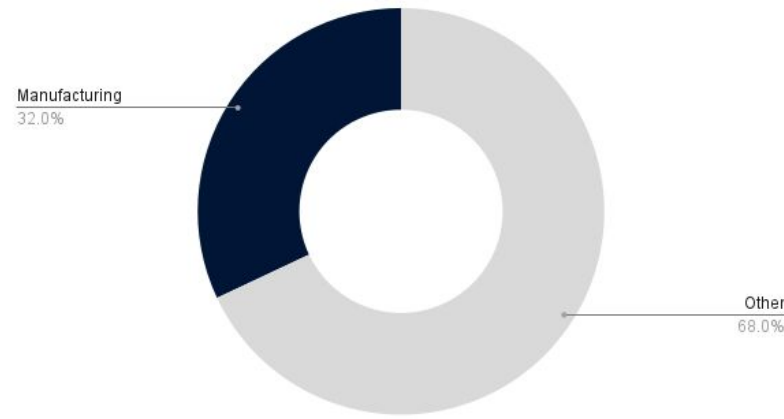
- Gloucester's economy has performed well over last several years with job and wage growth across several sectors
- Gloucester core maritime economy represents over 2,100 jobs, and over \$100m in wages - as a percentage, approximately the same as in 2013
- Gloucester's fisheries activity levels have performed better than other New England ports and the US fishing industry as a whole
- Gloucester is one of the top 10 to 15 locations in the US for seafood processing - a growing but consolidating industry
- Gloucester's tourism sector appears to be more seasonal than Essex County overall

# Gloucester's Economy

Jobs: Percent Manufacturing



Wages: Percent Manufacturing



## Job Mix

- Approx. 11,000 total jobs
- 2,100 manufacturing jobs more concentrated in manufacturing than the US or MA (LQ of 1.75 compared to US), but it's declined by 175 jobs since 2013
- 1,800 leisure/hospitality jobs with an increase of 327 jobs since 2013

*Data Source: NP calculations based on MASSLMI city town annual statistics*

## Wage Base

- \$641m wage base
- 32% of city wage base is in manufacturing.
- Average manufacturing wage is \$101k, which is 13% higher than the average MA manufacturing wage – this higher wage reflects the more skilled manufacturing job mix in Gloucester

*Data Source: NP analysis of U.S. Census Bureau, Center for Economic Studies, <https://onthemap/ces.census.gov>, 2018*

## Workforce Inflow/Outflow

- One third of Gloucester's private sector jobs are filled by Gloucester residents
- 8,600 Gloucester residents leave Gloucester for work

# Gloucester’s “Blue Economy” is at least 20% of the city’s job base <sup>(1)</sup>

Gloucester’s “Blue” economy (preliminary estimate) is:

- 20% of the city’s employment base
- 16% of the wage base

This is roughly equivalent to 2013 percentages

	Jobs 2019	Wages \$m
Marine Education, Advocacy, Research & Innovation	220-230	\$16-17
Seafood	583	\$46.0
Fishing / Fleet Svc	130*	\$11.2*
Tourism	1200	\$31
Maritime Total	2112 - 2122	\$102.8

Data Source: NP estimates

\* Excludes 1099 employees

(1) note initial estimates may change as new information becomes available to offset data suppression and privacy rules regarding company data





# Fishing and Seafood Industry



## Fishing

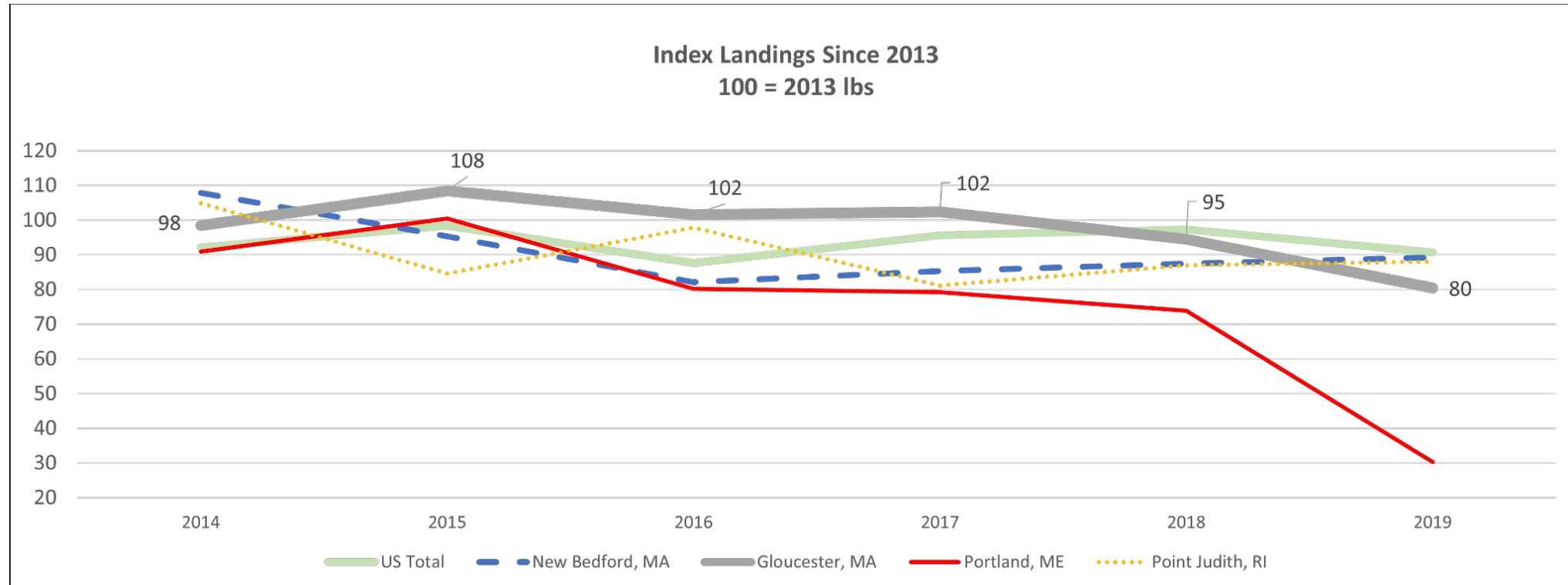
# Key Findings

- Gloucester's fishing industry is in the midst of a transition, this isn't all good or all bad.
- Decline in landing weight but increase in landing value from 2013-2019 indicates that there has been a shift from large-scale groundfishing to lobstering and small-scale operations with a higher per-pound value.
- When measured by fleet, dealer activity, and daily trips, Gloucester's fishing capacity and activity is competitive with, or leading regional peers (New Bedford and Boston)

# Decreasing Landings Weight (lbs)

**Despite declining landing weight, since 2013 Gloucester has performed better than the US overall and the other large fishing ports in New England, with the exception of 2019. Gloucester landings went from 122mlbs in 2009, fluctuated in the mid 60mlbs range until 2017, then dropped to approx. 50mlbs in 2019.**

- New Bedford declined after 2014 and is essentially flat
- Portland ME equaled Gloucester's landing totals in 2013 but has fallen substantially since then



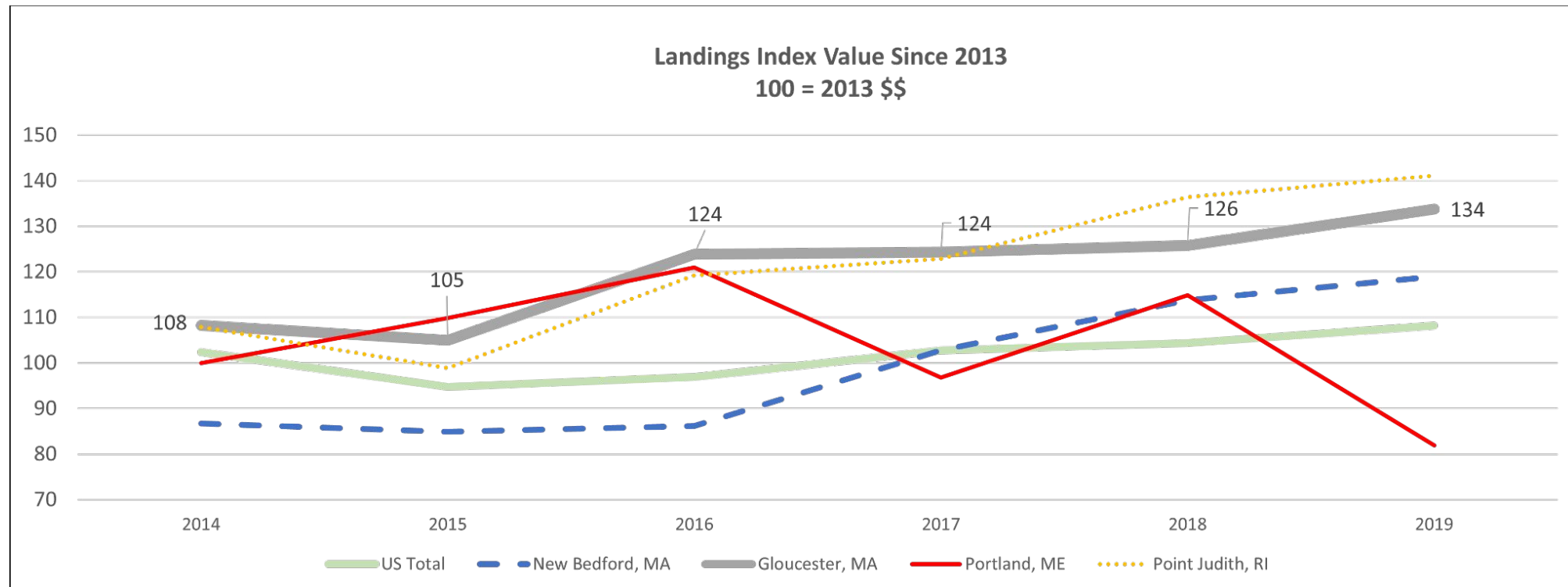
Source: NP analysis NMFS Landings data, various years



# Increasing Landings Value (\$)

**Since 2013, Gloucester's catch value has increased in value 24% faster than the US, reflecting a change in mix due primarily to Lobster.** In 2019 Gloucester had the highest catch value since 2011 at \$56.6m, which was \$6 million higher than 2009 when the total pounds caught was 143% higher. Price per pound which went from \$.41 in 2009 to \$1.13 in 2019.

- Among major New England ports, only Point Judith has seen a higher increase in landing value.
- Portland ME has seen unequal performance over this period.



Source: NP analysis NMFS Landings data, various years

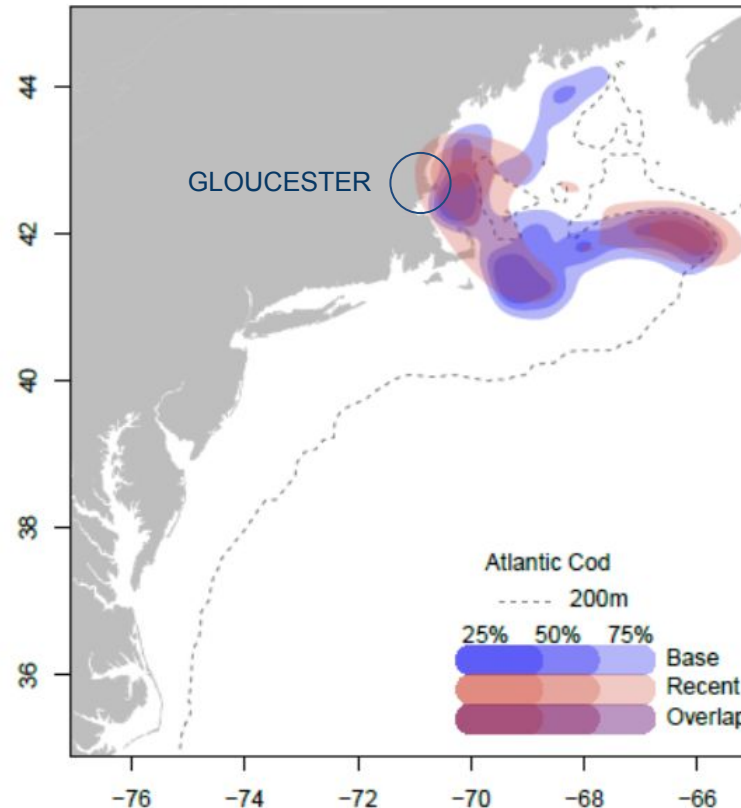
# Landings Changes Reflect Ecosystem Change

Source: <https://storymaps.arcgis.com/stories/b3321ee343c9424eb6557332f81509c6>

- Landing weight is going down as value is going up, reflecting increased shift toward lobster
- The changing fishery implies having a harbor with the ability to handle a diverse fishery, including providing the shoreside infrastructure and equipment to support different harvesting processes

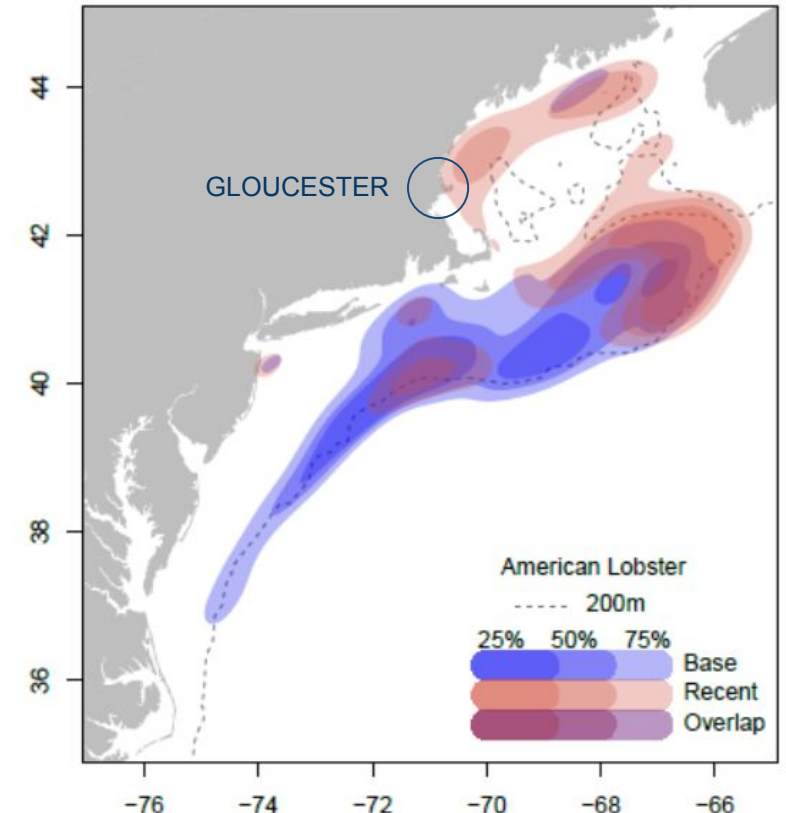
## Atlantic Cod Density

habitat range has and is projected to continue shrinking, but is diversifying



## American Lobster Density

habitat has already and is projected to continue shifting north



Source: NOAA *The Northeast Shelf: A Changing Ecosystem*, Base = 1970, Recent = 2017-2019

# Gloucester's fishing capacity and activity appears to be roughly equivalent to New Bedford.

- Capacity is measured by harvesters and vessels.
- Activity is measured by trips, harvesters and dealers.
- This data implies about Gloucester:
  - The largest fishing fleet
  - Most dealer activity
  - And a fleet that makes frequent trips (dayboat driven)
- 2013 Ports Compact Study estimated 279 active vessels in Gloucester
  - The MA Commercial Fishing Permit database showed 425 homeported vessels in 2014

2018	Gloucester	New Bedford	Boston
Permitted harvesters	436	416	166
Homeported Vessels	446	329	123
Trips Landing	19,638	10,551	2,165
Active permitted harvesters landing	607	720	146
Active dealers purchasing	87	81	21

Data Source: Mass Marine Commercial Fisheries Port Profile reports various ports; MA Permitting Database, SAFIS Dealer Database, 06/02/2020 & ACCSP Data Warehouse, 03/17/2020 TH





## Fishing

### Key Questions

**How much activity is required to maintain the viability of harbor infrastructure as fishing capacity market shifts to smaller operations and different species?**

- What is the minimum level of active fishing needed to justify the investment in infrastructure and supporting services?
- Will shifting species require changes to the shoreside infrastructure to support it?
- What mix of land uses can complement and support the fishing market?



## Seafood Industry

### Key Findings:

- Seafood processing is a mature, global, growing, industry throughout the state and continues to have a strong presence nationally, but the industry is consolidating and employment is shrinking nationally while the wholesale market is expanding
- Gloucester is one of the top 10-15 seafood processing locations in the country in terms of number of employees with one of the highest wage bases in the country thanks to its mix of jobs

# Gloucester is one of the top 10-15 seafood processing communities in the US

## National Industry Performance

Since 2013, nationally, the industry is consolidating, and overall employment has fallen with limited growth in demand and increased imported product.

## Massachusetts vs. US

- In 2019 there were an estimated 816 seafood processing establishments across the US employing approximately 35,000, for an average size of 43 employees per site with average wage of \$49,847.
- Massachusetts has 46 establishments employing 2,780 people - 3rd highest number of employees in the country. MA seafood firms have more employees on average (60 vs 43 for the US) and the 2nd highest wages (\$61,626 vs Washington’s \$73,983).

## County-Level Analysis

Using the same datasets as the County level analysis: Gloucester represents, within Essex County, 50% of the firms, 90% of the employees, and 93% of the wages.

## Comparing Massachusetts Counties (2019)

	Bristol	Essex	Suffolk	Plymouth
Establishments	19	8	8	4
Employees	1628	554	366	116
Avg Size	85.7	69	45.8	29
Employee LQ	29.8	7.1	2.2	2.7
Total Wages	\$92m	\$44m	\$22m	\$5.9m
Avg Annual Wage	\$56,650	\$79,912	\$60,422	\$51,128
National County Rank Firms	3	12	12	
National County Rank Employees	3	9	16	35
National County Rank Annual Avg Wages	8th	3rd	6th	13th

Data Source: NP analysis of BLS OCEW payroll employment data



# Seafood wholesale is a growing sector

## National Industry Performance

Since 2013, nationally, seafood wholesale business has steadily added jobs (nearly 5,000) and businesses (400+).

## Massachusetts vs. US

- In 2019 there were an estimated 2,700 seafood wholesalers across the US employing approximately 28,000, for an average size of 10 employees per site.
- Massachusetts has 159 establishments employing 2,359 people. MA seafood wholesalers have more employees on average (15 vs 10 for the US) and average wage (\$67,267 vs \$53,834 ) is 25% higher than the national average.

## County Level Analysis

Gloucester represents at least 45% of the Essex total establishments.

## Comparing Massachusetts Counties (2019)

	Suffolk	Essex	Bristol	Barnstable
Establishments	49	36	22	9
Employees	1348	431	268	107
Avg Size	28	12	12	12
Employee LQ	10.1	6.9	6.2	5.8
Total Wages	\$91m	\$31m	\$17m	\$5.3m
Avg Annual Wage	\$67,507	\$71,802	\$62,985	\$50,091
National County Rank Firms	6	12	22	
National County Rank Employees	2	9	22	
National County Rank Annual Avg Wages	7	4	9	

Data Source: NP analysis of BLS OCEW payroll employment data



## Seafood Industry

### Key Questions

## How can the Harbor Plan support continued utilization and investment in Gloucester's seafood industry?

- How much overlap is there between seafood processing and the seafood wholesale business in Gloucester? Are they effectively the same business in Gloucester? What are the implications for the waterside and landside infrastructure?
- Are there emerging processing technologies that will require different scale of facilities ?
- What shared harbor infrastructure is needed to allow efficient transfer to inland seafood processing facilities?



# Tourism



# Tourism

## Key Findings

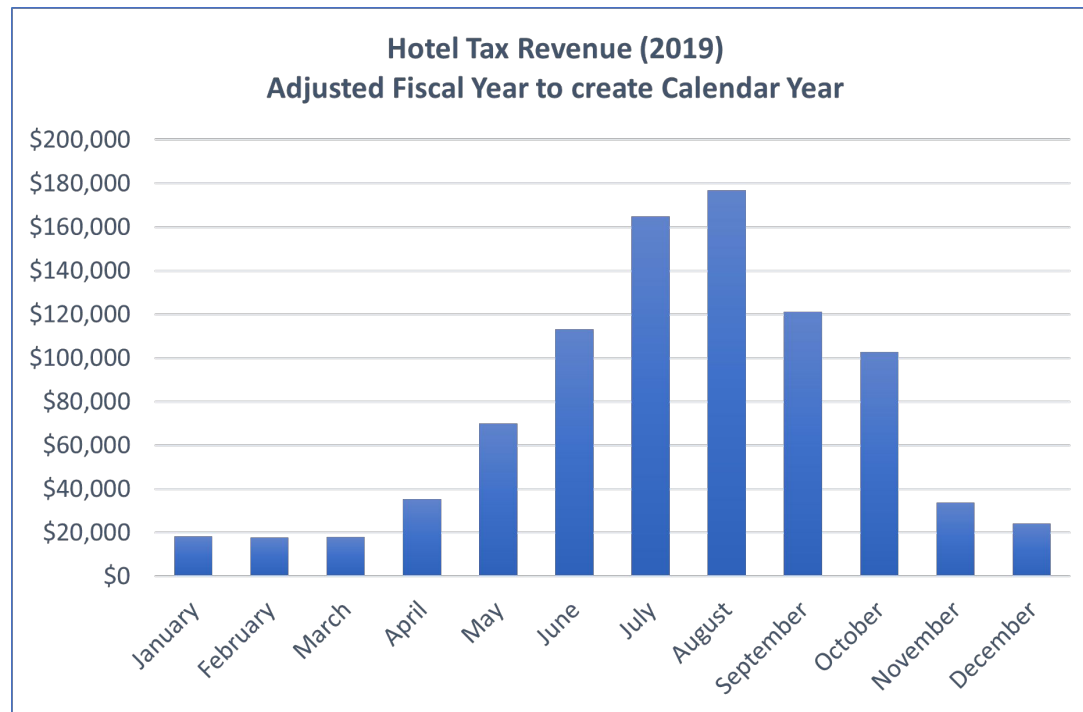
- Tourism in Gloucester is highly seasonal
- Gloucester is a regional destination for visitors predominantly from areas north of the Mass Pike, and is the destination for 70% of visitors within the North Shore trade area (which includes Salem, Beverley, and Manchester-by-the-Sea)
- The harbor is very much a part of the visitor experience.



# Gloucester's tourism sector appears to be highly seasonal

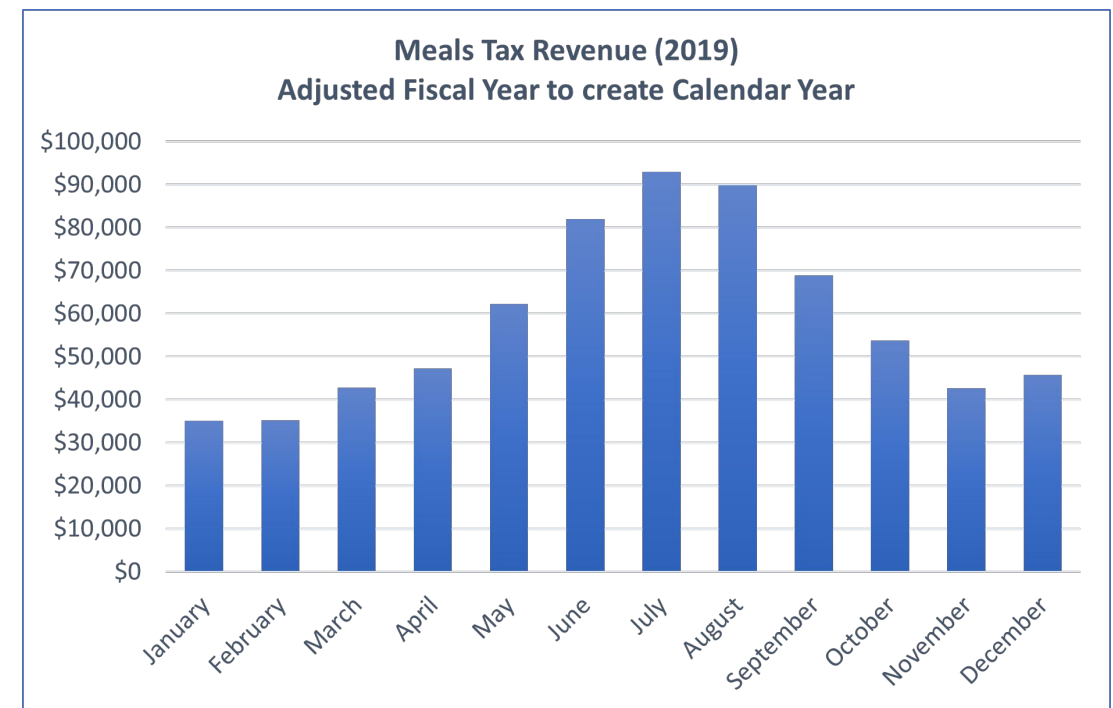
## Hotel / Lodging Tax

- 75% of Gloucester's hotel activity takes place during the summer and early fall
- Pre Beauport Hotel, accommodation revenues equaled \$14m



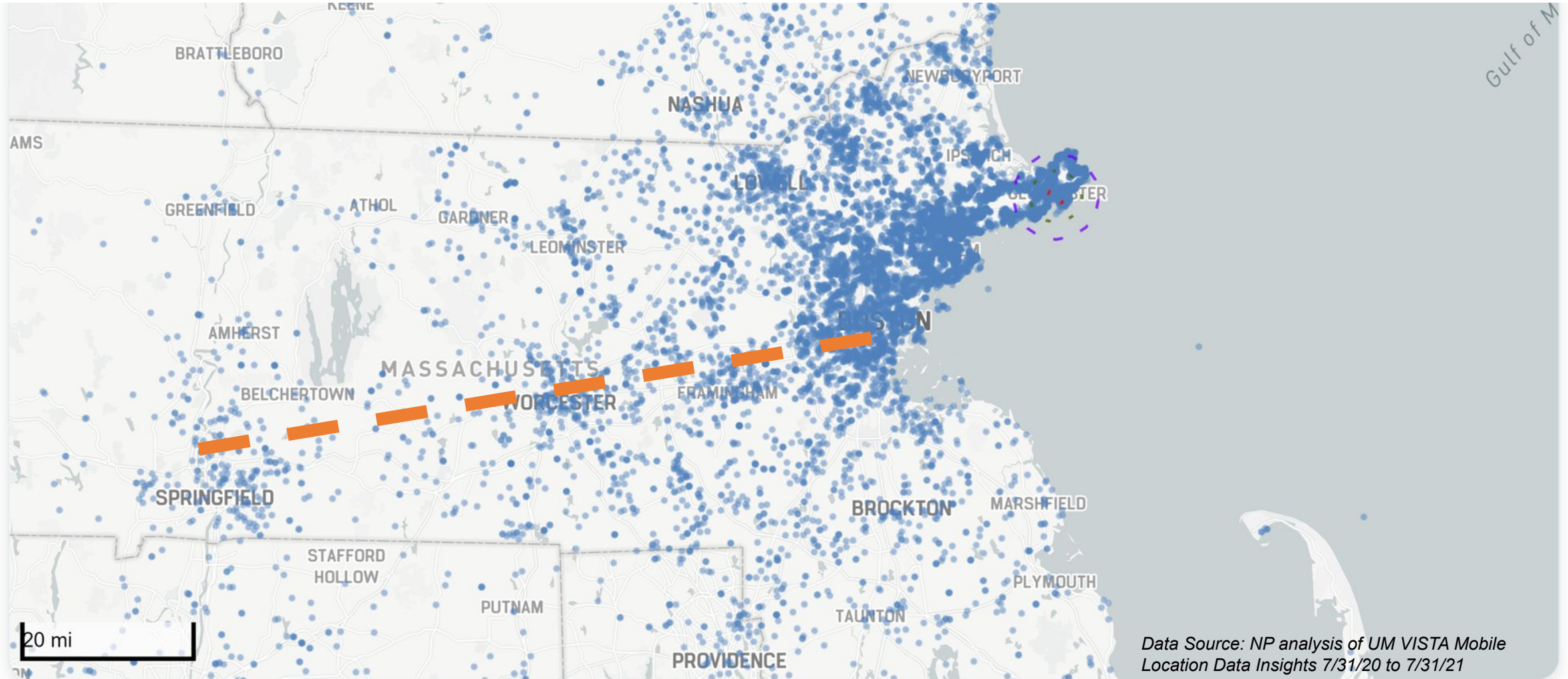
## Meals Tax

- 55% of Gloucester's meals tax is generated during the summer and early fall
- "Meals" in 2019 equaled \$93m in revenue



Data Source: NP calculations based on MA DOR Data and Analytics Research Bureau Rooms and Meals Tax Liabilities by Month

# This visitor point map suggests that the Mass Pike is a natural southern boundary for Gloucester visitors





# Tourism

## Key Questions

## How can we leverage tourism and recreation as economic engines for the harbor without undermining marine industrial uses?

- What are the specific areas of tourism and recreational boating that are growing in the Gloucester market, and where are they supporting vs. competing with WDI?
- What current sites anchor the tourism and recreational boating markets in Gloucester, and where are they supporting vs. competing with WDI?
- What are some creative ways we can leverage tourism and recreation to finance WDI infrastructure investment?





# Gloucester's Resilience & Infrastructure Baseline



# Infrastructure Condition

- Within the inner harbor and DPA, there are not any significant utility deficiencies, including, water and sewer, beyond typical aging infrastructure requiring routine maintenance and rehabilitation.
- Electric power is owned and operated by National Grid where reliability has been a concern. National Grid is currently taking some measures to improve reliability to the system, specifically at a substation in the inner harbor.

## Next steps:

- high-level analysis of waterside infrastructure (piers, sea walls, berthing) to align with economic strategy
- Gathering available data to assess Harbor activity and berthing congestion in terms of dockage supply and demand to shape infrastructure reinvestment agenda (data sources: NOAA VMS, Coast Guard AIS Tracking, MA Fish & Wildlife)





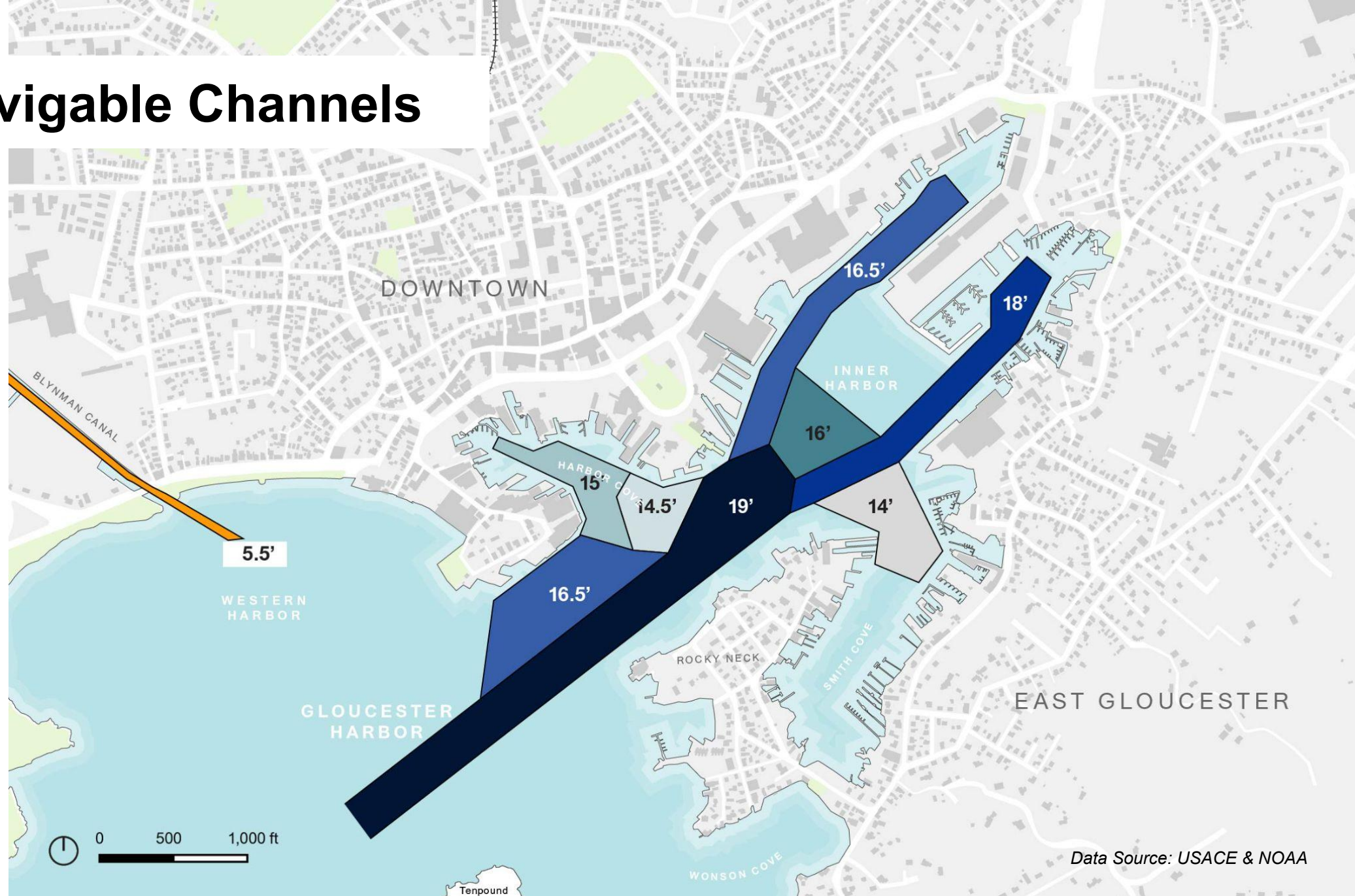
# Federal Navigable Channels

## Economic Impact

These are maintained by the Army Corps of Engineers, who is obligated to dredge to maintain a specified depth.

Channel depths (measured in 2017) dictate what types of ships can access each part of the harbor.

A maintenance offset from these areas allows the Corps to protect the slope and access the channels for dredging etc.



Data Source: USACE & NOAA



# Current Flood Risk Areas

2015 CCVA & 2021 CZM Resiliency report (forthcoming) provide guidance on strategies to protect the Harbor from flooding.

Data Source: FEMA DFIRM


## REGULATORY

 Current DPA Boundary

## TRANSPORTATION

 Railroad


## ENVIRONMENTAL

 100yr Flood Zone

## Impervious Surfaces


 Impervious Surface

## National Wetland Inventory

 Estuarine and Marine Deepwater

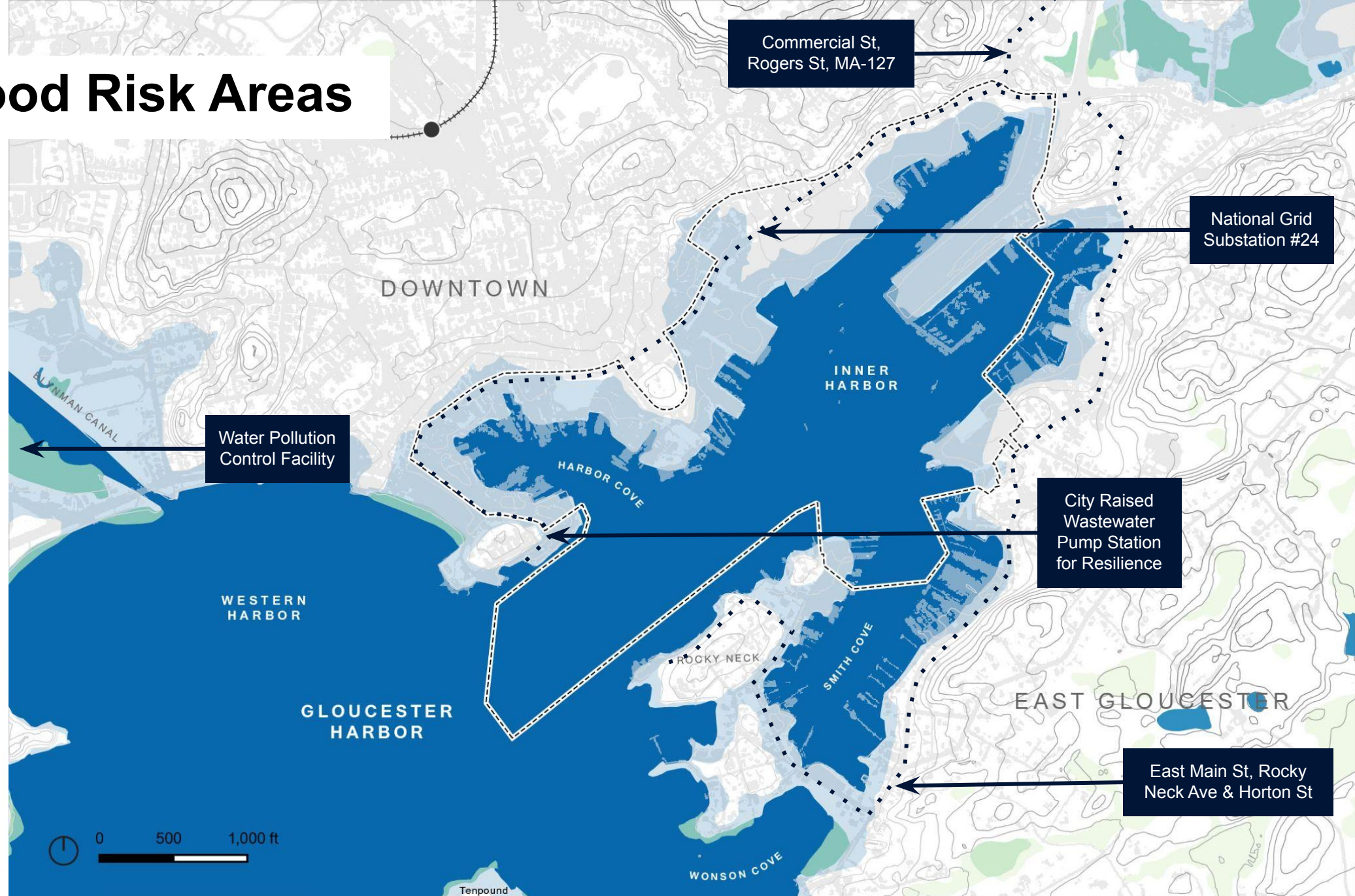
 Freshwater Pond

 Riverine

 Estuarine and Marine Wetland

 Freshwater Emergent Wetland

 Freshwater Forested/Shrub Wetland



Commercial St,  
Rogers St, MA-127

National Grid  
Substation #24

Water Pollution  
Control Facility

City Raised  
Wastewater  
Pump Station  
for Resilience

East Main St, Rocky  
Neck Ave & Horton St



# Projected 2050 Flood Risk Areas

100-year (1%) flood extent and depth for 2050. Assumes 2.5 ft of sea level rise.

Data Source: Massachusetts Coast Flood Risk Model (MC-FRM) & NOAA CUSP Shoreline



Commercial St,  
Rogers St, MA-127

Water Pollution  
Control Facility

City Raised  
Wastewater  
Pump Station  
for Resilience

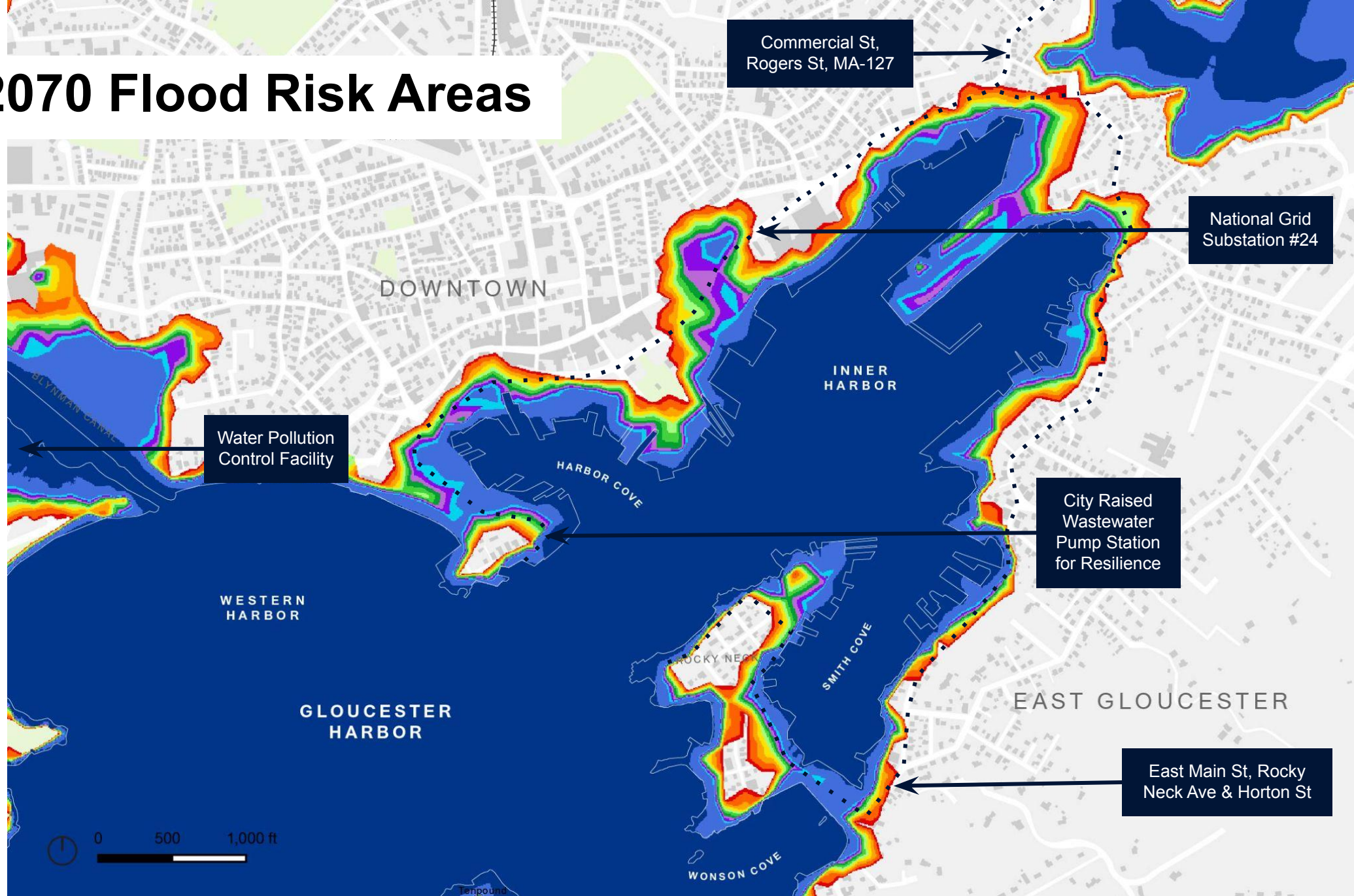
East Main St, Rocky  
Neck Ave & Horton St



# Projected 2070 Flood Risk Areas

100-year (1%) flood extent and depth for 2070. Assumes 4.3 ft of sea level rise.

Data Source: Massachusetts Coast Flood Risk Model (MC-FRM) & NOAA CUSP Shoreline





# Vulnerable Critical Infrastructure

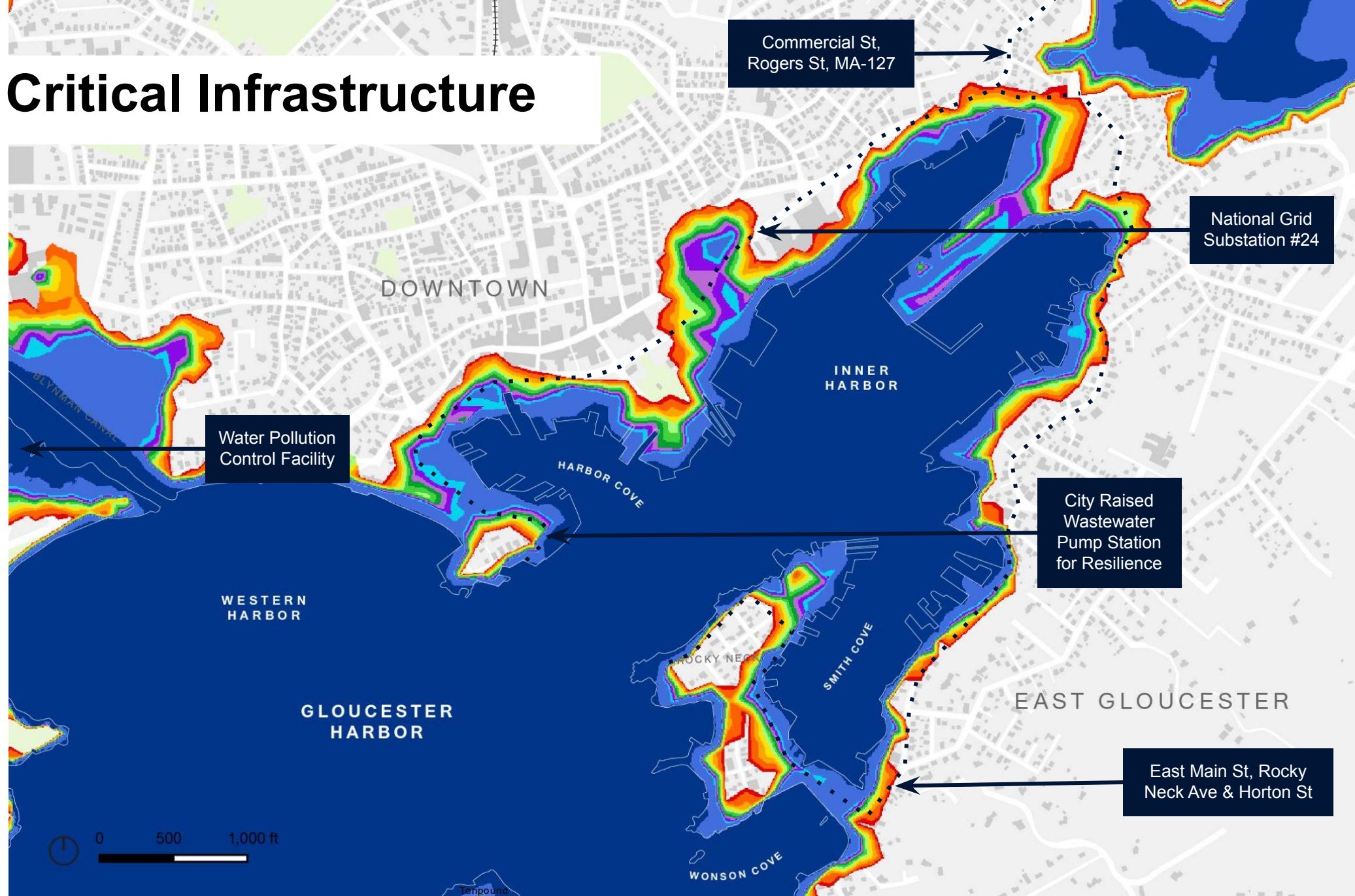
## 2070 1% Flood Risk

### Water Pollution Control Facility

(50 Essex Avenue) is already within a flood zone, but additional flood protection is required to meet the 2030 flood elevations, and grant recently received to start initial improvements.

### Harbor Access Roads

multiple DPA access roads are subject to current flooding which worsens with future sea-level rise, including Commercial Street, Rogers Street, and MA-127 as well as East Main Street, Rocky Neck Avenue and Horton Street.





# Initial Economic Strategy Sub-Areas

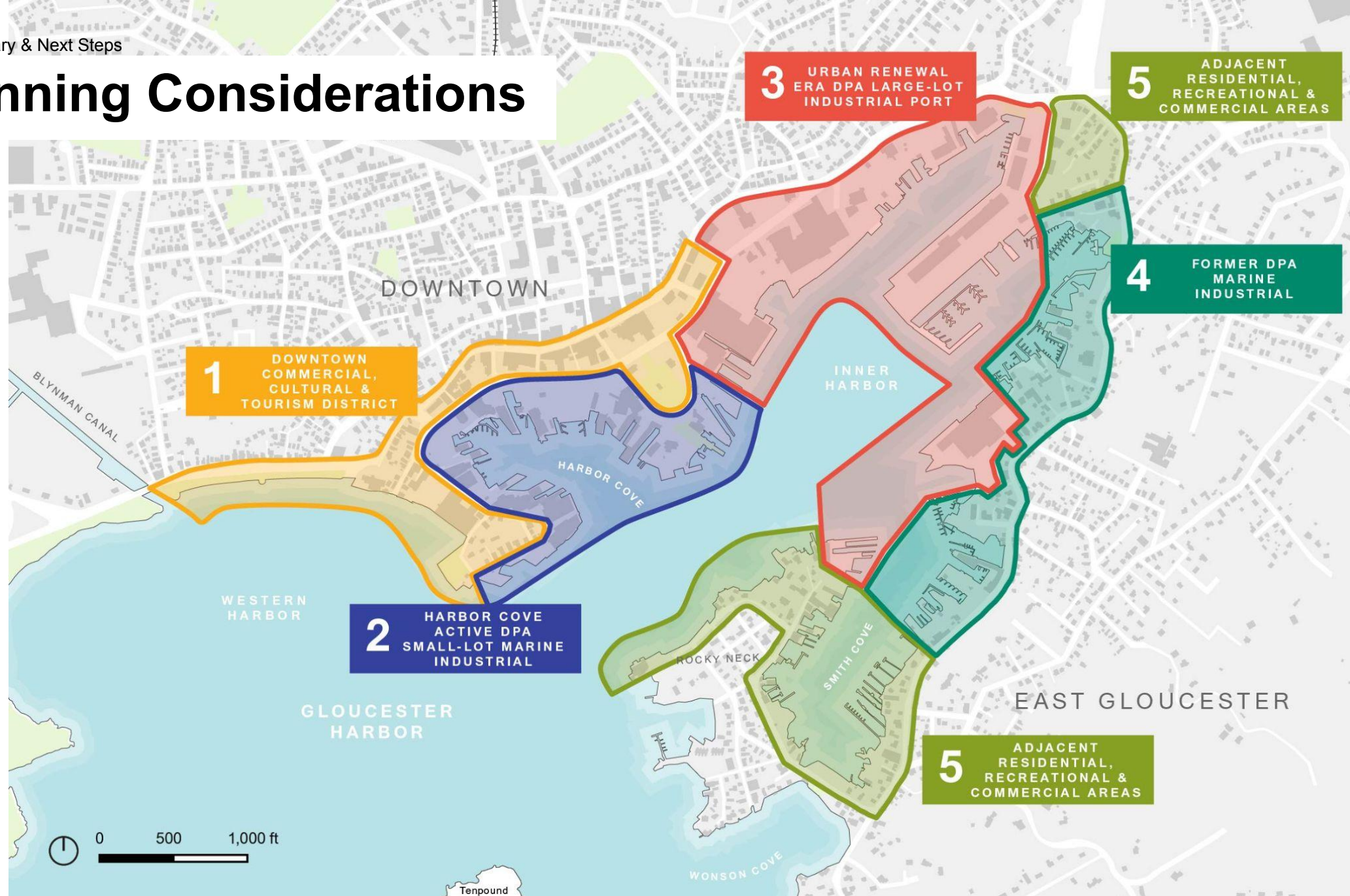
Initial takeaways by sub-area for further exploration in development of economic strategy



# Harbor Planning Considerations

We propose thinking about the harbor in terms of different sub-areas with different assets, issues and opportunities:

- Infrastructure condition
- Resiliency, flood risk and climate change
- Parcel size, ownership & status
- Regulatory environment
- Economic activity types (tourism, fishing, etc.)
- Circulation (truck routes, parking)
- Public access





# Going forward there is a fork in the road

## Economic Strategy vs. Regulatory Plan

Harbor doesn't exist in isolation - upland activity (downtown, inland industrial parks) matters.



# Next Steps

## Upcoming HPC Meetings\*

- October TBD - Initial Economic Strategy

## Engagement

- August through September - Additional Stakeholder Engagement (Business & Property Owners)
- October TBD - Public Kickoff Visioning Workshop\*

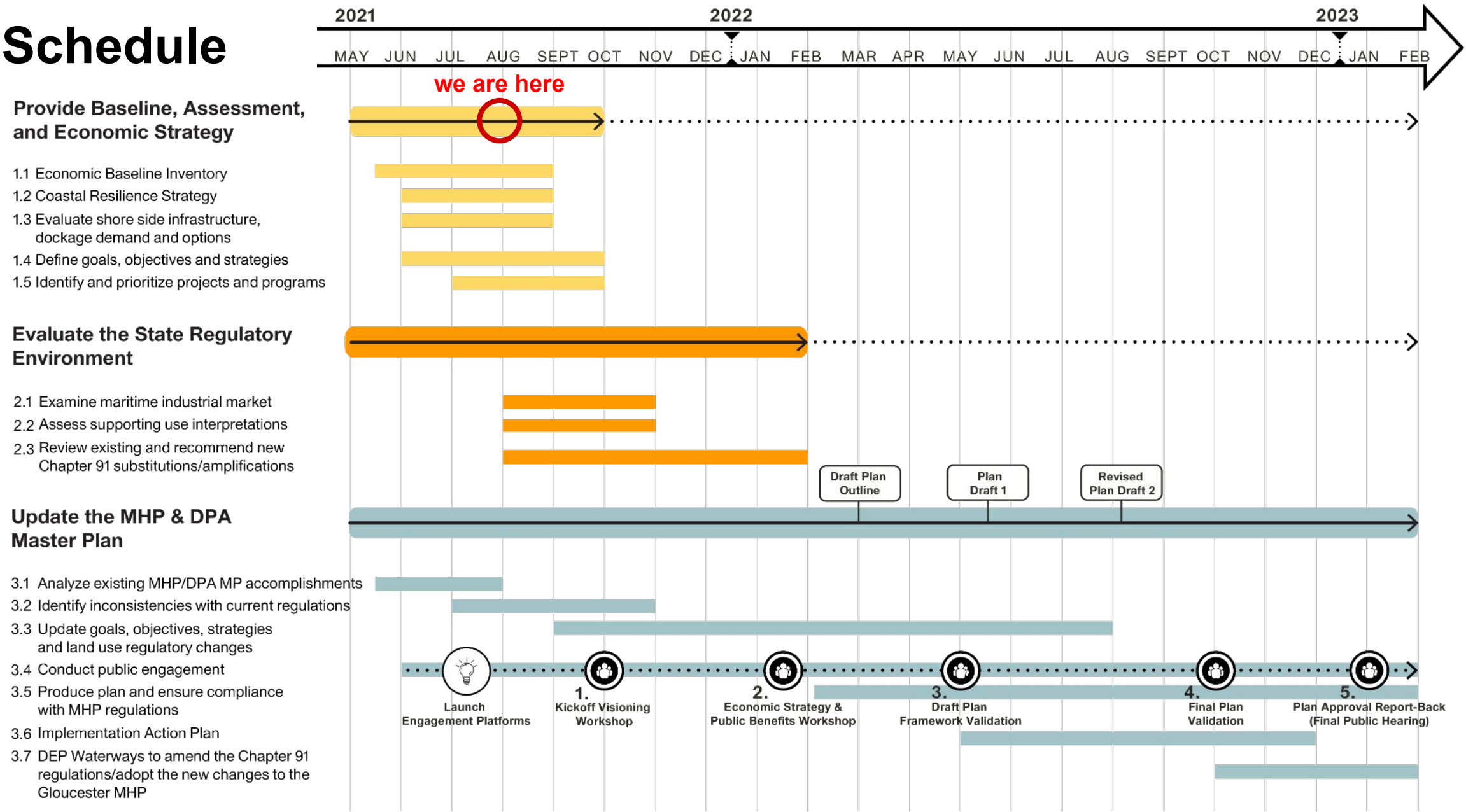
## Planning Analysis

- High-level analysis of waterside infrastructure (piers, sea walls, berthing) in priority areas
- Assess harbor activity, berthing congestion (dockage supply/demand)
- Review and integration of yet-to-be-released plans (North Shore Blue Economy, CZM Resiliency)
- Develop framework for economic, resilience and infrastructure strategy

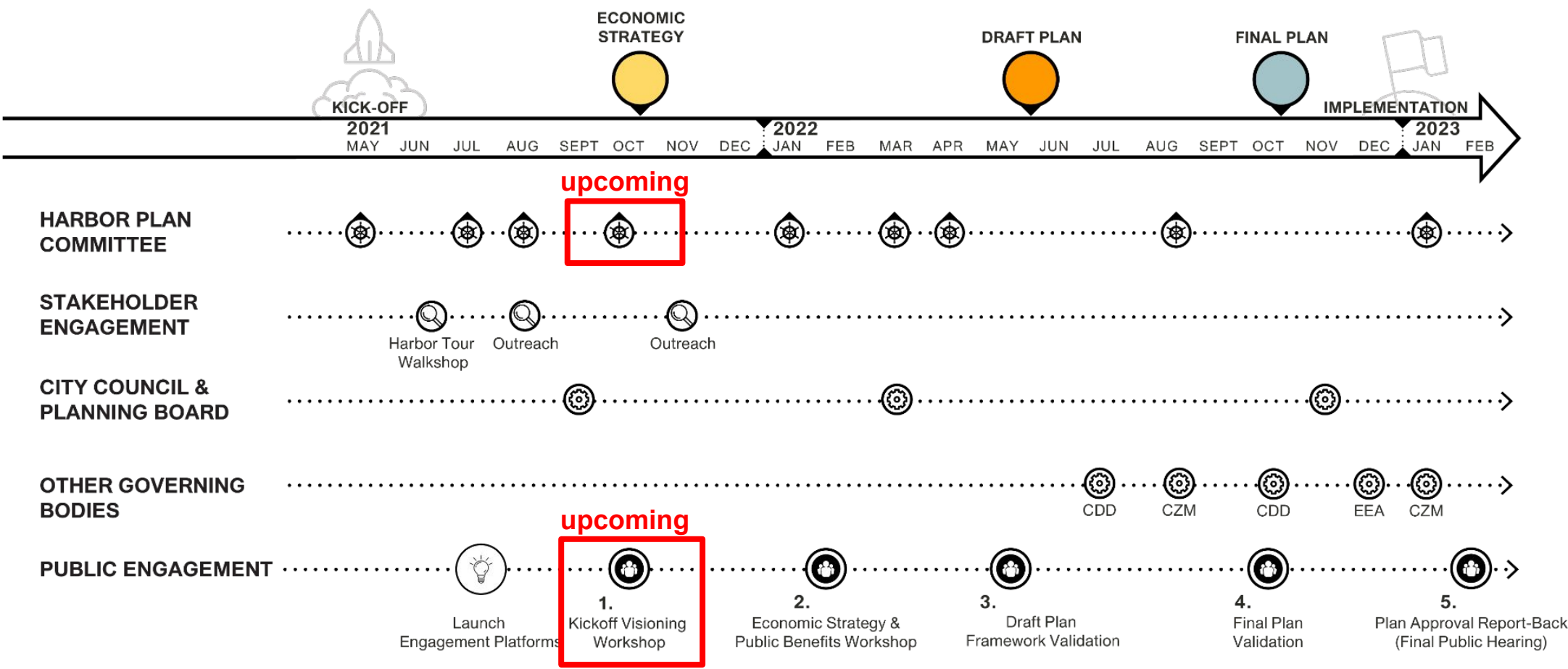
\*Meetings will be online and conducted via Zoom until further notice



# Schedule



# Stakeholder & Public Engagement



CDD: [City of Gloucester Community Development Department](#)  
EEA: [Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs](#)  
CZM: [Commonwealth of Massachusetts Office of Coastal Zone Management](#)